

**4-1BB/CD137/TNFRSF9 (E8T1Q) Rabbit
Monoclonal Antibody**

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For Research Use Only. Not for Use in Diagnostic Procedures.

| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---------------|-------------|--------------|-----------|-----------------|-------------|-----------------|
| W | H | Endogenous | 32, 40 | Rabbit IgG | #Q07011 | 3604 |

| Product Usage Information | Application | Dilution |
|--------------------------------|--|----------|
| Storage | Western Blotting | 1:1000 |
| Specificity/Sensitivity | Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. <i>Do not aliquot the antibody.</i> | |
| Source / Purification | 4-1BB/CD137/TNFRSF9 (E8T1Q) Rabbit Monoclonal Antibody recognizes endogenous levels of total 4-1BB/CD137/TNFRSF9 protein. | |
| Background | Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gln128 of human 4-1BB/CD137/TNFRSF9 protein. | |
| Background References | <p>TNFRSF9 is a member of the tumor necrosis factor receptor superfamily (1,2). It is also called 4-1BB or CD137 (1, 2). 4-1BB/CD137/TNFRSF9 is expressed in activated CD4+ and CD8+ T cells, natural killer cells and dendritic cells (2-5). The ligand 4-1BBL/CD137L/TNFSF9 on antigen presenting cells binds to 4-1BB/CD137/TNFRSF9 and costimulates the activation of T cells (5). The binding of agonistic antibodies to 4-1BB/CD137/TNFRSF9 also leads to costimulation for T cell activation (5). Studies have shown the effectiveness of targeting 4-1BB/CD137/TNFRSF9 by its agonistic antibodies in cancer immunotherapy (6).</p> <ol style="list-style-type: none"> Sun, Y. et al. (2002) <i>Nat Med</i> 8, 1405-13. Wilcox, R.A. et al. (2002) <i>J Clin Invest</i> 109, 651-9. Lin, W. et al. (2008) <i>Blood</i> 112, 699-707. Wilcox, R.A. et al. (2002) <i>J Immunol</i> 168, 4262-7. Melero, I. et al. (1997) <i>Nat Med</i> 3, 682-5. Yonezawa, A. et al. (2015) <i>Clin Cancer Res</i> 21, 3113-20. | |

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| Species Reactivity | Species reactivity is determined by testing in at least one approved application (e.g., western blot). |
| Western Blot Buffer | IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight. |
| Applications Key | W: Western Blotting |
| Cross-Reactivity Key | H: Human |
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